ARCHAEOLOGY AT THE CARP RIVER FORGE

Note to teachers: This supplement includes a discussion guide, lessons and Michigan Content Standards to use with the Michigan Time Traveler page published September 11, 2002, in the *Lansing State Journal*. You may reproduce the pages in this supplement to use with students.

DISCUSSION GUIDE

(*SOC.1.1. Time and Chronology; SOC.1.2. Understanding the Past; SOC 1.3. Analyze and Interpret the Past; ELA.1. Meaning and Communication in Context*)

- **The Carp River Forge.** Using a map of Michigan, locate Negaunee and the Carp River. What mine produced the iron the forge used? (Jackson Mine) What does the forge look like today? (natural setting in woods with foundations of buildings and artifacts that remain)
- **What Happened at the Forge?** Why was the forge built? (to make iron bars, saving shipping costs) By whom? (Jackson Iron Co.) Why did the company need to build a dam in the Carp River? (turn a water wheel for power) What fuel did the forge use to heat the iron? (charcoal) How did they make the fuel? (burning wood in kilns) What was the final product of the forge? (iron bars)
- **The Industrial Archaeologists.** What kind of work do industrial archaeologists do? From where do the archaeologists come who are studying the forge? (MTU) What are the three ways they do their work? (Study documents about the forge; learn about other forges; excavate the site–the "dig")
- **Carp River Forge Time Line.** For how many years did was the forge in business? (seven, 1848-1855) What were some problems the forge faced? (dam breaking, changes in operators) When was the first archaeological investigation of the forge site? (1973) Why did they come back the next year? (to identify buildings and map the site) Where can you go to learn more about the forge? (Michigan Iron Industry Museum)

ACTIVITY ONE: Stampedes to Riches

(*SOC.1.1. Time and Chronology; SOC.1.2. Understanding the Past*)

The Carp River Forge existed during a time in United State history when adventurous, entrepreneurial people found many opportunities to "get rich quick" through mining. Assign each of the following discoveries to small groups of students for research. (Add other discoveries to the list if you wish.) Ask each group to present an oral report about the discovery and its significance in state or national history and make a poster about the event. Each poster should include a map showing the location of the discovery and pictures or drawings of the mineral, how it was mined and its primary uses. Place the posters in a time line around the classroom.

- There is a copper rush to Michigan's Upper Peninsula from 1841-46 after Douglass Houghton writes a 1840 report about the copper riches he finds in the Keweenaw Peninsula.
- While doing a land survey in 1844 William Burt discovers iron ore near Teal Lake in the Upper Peninsula near Negaunee. Iron miners come from New England and European nations to work for the iron mining companies.
- The California Gold Rush: 80,000 prospectors head for California after gold is discovered on Jan. 24, 1848, at Capt. John A. Sutter and James W. Marshall's sawmill, on American Fork River.
- The Comstock Lode, discovered in the eastern Sierra Nevada mountains in 1859, starts a silver rush to the Washoe region of what is now the state of Nevada.
- Gold miners rush to Idaho when gold is discovered along the Canal Gulch on the Nez Perce Reservation in 1860 and in the Boise Basin in 1862.
- "Thar's gold in them thar hills!" is the cry in 1874 as prospectors rush to the Black Hills in the Dakota Territory (now the state of South Dakota).
- The discovery of gold in the Yukon Territory in 1897 creates the Klondike stampede to Alaska in 1897-98.

ACTIVITY TWO: What Does It Mean? Be an Archaeologist.

(*SOC.1.2. Understanding the Past; SOC.2.3. Location, Movement, and Connections*)

Historical research helps to determine the meaning of artifacts found at an archaeological site. As archaeologists work, they give each place they dig a site number. Commonly, they remove about 3-4 inches of dirt at each level and record the materials they find by site, unit and numbered level. Students can draw basic inferences from artifacts, just as the archaeologists do. Distribute copies of the "Some Carp River Forge Discoveries" handout (page 3) to students. Discuss unknown words (see glossary). Ask students to study the three lists of objects. Then use the following questions for a discussion, or provide the questions on paper or chalkboard for individual work.

QUESTIONS	POSSIBLE RESPONSES
1. The three lists come from different places on the site. Which had an industrial use? Which had a domestic use? Which is harder to figure out? How can you tell?	Industrial: TEU 23; domestic: TEU 37; hard-to-figure-out: TEU 26 (may have present recreational use). Tools and iron objects are found in 23; Dishes and home use objects are found in TEU 37.
2. Which level of the dig is closest to the surface? Deepest? How can you tell?	Closest to surface: 1; Deepest: 4. More modern objects found in level 1.
3. What might have been some recent activities at this wooded site? How can you tell?	Hunting (cartridge shells), camping (charred wood), partying, eating (Coke, Pepsi bottle fragments)
4. What types of objects tend to be found in pieces? Which tend to be found whole and unbroken? Why?	Pieces: pipes, earthenware, glass, nails and smaller metal objects. Whole: heavy metal objects.
5. What remains from their means of transportation?	Horse shoe, ox shoe, bit
6. What object, found in pieces, could be mended with pieces found at another level?	Pipe (for smoking)
7. Why do you think so many nails were found?	As wooden buildings deteriorated and either fell apart or were taken down, nails fell or were discarded.
8. Did the people in this deep woods location eat all their meals off plain tin plates? How do you know?	No, a variety of dishes are represented in different colors and patterns; a pewter utensil handle was found.
9. Do you think that there were women and children at this forge site?	Variety of dish designs probably indicate women. No evidence of children in these lists (there were childen).
9. If you didn't know that this was the site of an iron forge, what other type(s) of 19th century industries might you think had been on this spot? Why?	Blacksmith: animal shoes, indications of a forge (blacksmiths used a forge)

GLOSSARY

bit: the part of a metal bridle that is inserted in the mouth of a horse
corroded: worn away by chemical reaction or change
chinking: caulking, substance used to fill spaces around windows, between boards, etc., in a cabin or building
concretion: a hard, solid mass
domestic: related to the household or family
firebrick: a brick capable of sustaining high temperature, often used to line furnaces, fireplaces, and chimneys
industrial: related t industry, work, labor
schist: a metamorphic crystalline rock
shard, sherd: a piece or fragment
slag: waste rock resulting from hammering or forging
spongeware, whiteware, yellow ware, etc.: types of dishes for eating, cooking
TEU: test excavation unit
tuyere: nozzle through which an air blast is delivered to a forge or blast furnace

ACTIVITY THREE: Read a Photo – Write a Story

(*SOC.1.2. Understanding the Past; ELA.2. Meaning and Communication: Writing*)

This photo of the Jackson Iron Mine (page 4) was taken around 1860. Jackson pit mines produced the iron ore used at the Carp River Forge from 1848-1855. The Jackson Iron Company was, for its time, the most prosperous iron mining company in the country. Copy and distribute the photo to students (or reproduce as a transparency and project). Using your favorite "Reading a Photograph" lesson, the guide found at the Museum of the city of New York (www.mcny.org/reading.htm) and/or the National Archives and Records Administration (NARA) Photo Analysis Worksheet (http://www.archives.gov/digital_classroom/lessons/analysis_worksheets/photo.html), have students analyze the photo. Then ask students to write a short essay based on the photo about working in this iron mine. Brainstorm some of the issues that they might include in their essays, such as job dangers and safety, the physical strength and labor required to do the job, the technology and transportation methods observed, the impact of mines on the environment and the use of the iron products to build a growing nation.

Some Carp River Forge Discoveries

Excavation Unit Number: TEU 23

Level 1: 1 olive bottleglass shard
1 clear bottleglass shard
1 sardine can lip
9 associated can fragments
64 cut nails
1 shotgun shell, modern
3 charred wood fragments
2 charred rocks, 1 w/slagal

Level 2: 71 cut nails
1 wrought iron bar
1 spike
1 spike head
1 broken iron strap fragment
1 folded sheet metal object, poss. tuyere
1 hole-punched iron object
5 firebrick fragments
1 olive bottle base

Level 3: 2 firebricks
15 firebrick fragments
1 red brick fragment
1 charred rock
2 slag-encrusted shist flakes
3 pipe bowl fragments (2 mended to pipe base in 23-4)
1 horseshoe
1 ox shoe
1 crude chisel
1 iron strap fragment
1 bit
1 broken chain link, long
1 broken chain link, short
1 bolt and washer
1 perforated piece of sheet metal
1 hollow metal object
8 misc. bits of iron
1 barrel strap
96 metal flakes
4 iron blobs
161 cut nails

Level 4: 62 cut nails
16 firebrick fragments
1 partial firebrick
1 corroded iron object
1 broken chain link
1 piece of thick wire
1 folded iron object
1 broken iron object
1 corroded iron cylinder w/ closed end
1 iron wedge
1 ox shoe
1 piece rod iron
1 large spike
1 iron ring
1 iron cylinder
1 pipe bowl base (mends w /2 pipe pieces in 23-3
4 metal fragments
6 pieces window glass

Excavation Unit Number: TEU 37

Level 1: 5 pieces window glass
32 cut nails and fragments
1 concretion
2 thin strips metal
91.5g chinking
28 pipe bowl fragments (6 bowls), tobacco leaf motif
1 blue spongeware rimsherd
2 blue transferprint rimsherds
1 sherd yellow ware
27 sherds white ware

Level 2: 1 red spongeware base sherd
1 red spongeware bodysherd
28 whiteware sherds
1 hand painted floral design sherd
2 sherds “flow blue” design sherd
7 pieces window glass
1 shard olive bottle glass
1 molded green glassware sherd, red dye
1 whole tobacco leaf motif bowl
4 pipe stems
1 metal button
1 piece of schist w/ concretion
470g chinking
37 cut nails and fragments
1 thin metal strip
1 large can lid

Level 3: 1 brick fragment
257.8g chinking
7 cut nails and fragments
1 pewter utensil handle
2 pieces window glass
1 shard clear bottle glass
2 sherds whiteware

Excavation Unit Number: TEU 26

Level 1: 2 bottle caps
2 aluminum pulltab
1 Coca-Cola bottle glass shard
33 clear bottle glass shards, mostly from Pepsi bottle
1 shard glass from either a hurricane lamp or Coleman lantern
2 sherds white ironstone cup
1 snuff can bottom
2 snuff can fragments
2 concretions
1 Smith & Wesson .32 centerfire cartridge
1 Western Co. .30 rifle cartridge
2 Federal “8” 2 1/2 “ shotgun shells
1 heavily corroded metal object
1 piece mortar from monument base
12 wire nails
2 cut nails

Level 2: 1 pointed wooden object
2 concretions
1 wire nail
8 cut nails

Level 3: 2 cut nails
1 piece of pyrite

Note: slag, ore and/or charcoal were also found at most levels for sites on this page. SOURCE: Sewell, Andrew. Cultural Continuity and Technological Change at the Carp Rive Forge. MA thesis, Michigan Technological University. 1999.

Jackson Pit Mine #1, ca. 1860

State Archives of Michigan

FURTHER RESOURCES

Web Resources

Bloomeries by Roger Smith (Univ. of North Carolina at Chapel Hill)
www.unc.edu/courses/rometech/public/content/mines_and_iron/Roger_Smith/roger/BLOOM4.htm

Fayette Historic Townsite
www.michiganhistory.org/museum/musefaye/

History of the Iron Ore Trade, 1910 Annual Report of the Lake Carriers' Association (Great Lakes Industrial History Center, at the Cleveland Digital Library)
web.ulib.csuohio.edu/SpecColl/glihc/articles/carrhist.html

Iron Deposits in Michigan, Michigan Dept. of Natural Resources
www.michigan.gov/deq/0,1607,7-135-3308_3582-9691--,00.html

Michigan Iron Industry Museum
www.michiganhistory.org/museum/museiron/

Mining in Michigan Gallery, Michigan Historical Museum
www.michiganhistory.org/museum/explore/museums/hismus/prehist/mining/

Sloss Furnaces, Birmingham, Alabama
www.slossfurnaces.com

Saugus Iron Works, Saugus, Massachusetts
www.nps.gov/sair/
www.cr.nps.gov/nr/twhp/wwwlps/lessons/30saugus/30saugus.htm (lesson plan)

Scranton Iron Furnaces
www.phmc.state.pa.us/bhsm/toh/scranton/scrantoniron.asp?secid=14

The Story Of Ironmaking Bloomery Forges At Picatinny Arsenal by E. S. Rutsch (The U.S. Army Engineer Research and Development Center, Waterways Experiment Station) [PDF]
www.wes.army.mil/el/ccspt/publications.html

Books

Dorr, John A., Jr., and Donald F. Eschman. *Geology of Michigan*. Ann Arbor, MI: The University of Michigan Press, 1970.

Panagopoulos, Janie Lynn. *North to Iron Country* (A Dream Quest Adventure). Spring Lake, MI: River Road Publications, 1996. Ages 8-14 Teacher's Guide available.

Mitgutsch, Ali. *From Ore to Spoon* (Start to Finish Book). Carolrhoda Books, 1981.